

**ORDER NO. 8184**

**DEVELOPMENT SERVICES MISCELLANEOUS 006-16:  
PLANNED UNIT DEVELOPMENTS AND HIGH PERFORMANCE BUILDINGS IN  
SOUTH HILLSBORO**

**AN ORDER RECOMMENDING ENDORSEMENT OF PRINCIPLES TO SUPPORT THE  
SOUTH HILLSBORO HIGH PERFORMANCE BUILDING PARTNERSHIP.**

WHEREAS, according to the United States Energy Information Administration, buildings consume approximately 40% of the total energy consumed in the United States; and

WHEREAS, increases in human population, energy costs, and resource constraints require energy efficiency and conservation action; and

WHEREAS, the potential for disruptive natural disasters and climate-change related stresses on current and future energy systems require greater resiliency; and

WHEREAS, the Hillsboro Environmental Sustainability Task Force has established environmental sustainability goals for the Hillsboro community and tracks progress toward established goals; and

WHEREAS, the City of Hillsboro is updating its Comprehensive Plan to include goals and policies for energy use reduction, renewable energy generation, and climate change mitigation and adaptation; and

WHEREAS, high performing homes – those built to a standard that exceeds the base Oregon Energy Code – reduce energy use and costs, increase occupant comfort, and benefit the natural environment; and

WHEREAS, the City of Hillsboro, the Energy Trust of Oregon, and other partners provide financial and other incentives to increase energy efficiency, renewable energy use, and other high performance building techniques and tools; and

WHEREAS, the City of Hillsboro is working with partners including the Energy Trust of Oregon, Earth Advantage, the Oregon Department of Energy, Portland General Electric, and SolarWorld to develop a one-stop high performance building incentive program for new construction in South Hillsboro; and

WHEREAS, Hillsboro's Community Development Code (CDC) Subsection 12.50.930.C provides the public benefit guidelines relating to Energy Usage Efficiency and Reduction; and

WHEREAS, Planned Unit Development proposals containing adjustments to CDC development standards must include public benefit standards such as Energy Usage Efficiency and Reduction techniques; and

WHEREAS, the City of Hillsboro and its partners have developed innovative concepts to deliver incentives and regulatory flexibility to developers and builders so that homes in South Hillsboro are built to a third party-verified high performance standard.

THE HILLSBORO PLANNING COMMISSION ORDERS AS FOLLOWS:

Section 1. The City envisions homes in South Hillsboro to have extraordinary comfort, efficiency, low utility bills, and to include cutting-edge building system technology that enhances efficiency.

Section 2. The City is committed to work with its partners to package existing incentives and to create new incentives, as well as offer Community Development Code development flexibility through approvals of Planned Unit Developments which integrate said innovative concepts where possible to support developers in South Hillsboro to build to a third party verified high performance standard.


Section 3. The City is committed to support its local renewable energy industry by prioritizing the use of renewable energy technology in new construction, and by encouraging and incentivizing developers to incorporate renewable energy at the time of construction.

Section 4. This order shall take effect immediately upon approval.

Approved this 13<sup>th</sup> day of July, 2016.

  
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Katie Eyre, President

ATTEST:

  
\_\_\_\_\_  
Gretchen Olson, Secretary

### South Hillsboro High Performance Building Partnership Concept Paper

In June 2015 the Hillsboro City Council adopted the City's first community Environmental Sustainability Plan (ESP), which represents one of the focus areas of the Hillsboro 2035 Community Plan. Three Goal Areas are defined in the ESP: Energy, Resource Conservation, and Resource Recovery and Renewal. The broad energy goals are to:

- Reduce community greenhouse gas emissions;
- Reduce use of non-renewable energy resources; and
- Expand use of renewable energy resources to meet demand.

Several goals and metrics in the ESP aim to track, measure and incent residential, commercial and industrial property owners to improve energy efficiency and reduce dependence on non-renewable energy sources.

Much of the energy efficiency work that is done takes place after the fact, to retrofit buildings that were not built to optimize efficiency. More buildings, such as the REACH multi-family/low income property in Orenco Station, are aiming to achieve a greater level of energy efficiency, but most still do not make efficiency a priority. For single family residential homes, there is arguably even more opportunity to design efficiency into new homes. Case studies show that designing and building to a higher efficiency standard not only benefits the homeowner through reduced utility bills and greater interior comfort, it benefits the developer/builder by distinguishing the efficient home in a competitive marketplace where more people than ever are concerned with energy efficiency and sustainability.

South Hillsboro represents a powerful and unique opportunity to meet these objectives on a large scale. Looking at the full build-out of South Hillsboro, if high energy efficiency homes were built throughout the Plan area, the savings estimated by the Energy Trust of Oregon could approach \$2.5M in homeowner utility costs, kilowatt-hours equivalent to 735 homes per year, therms (natural gas) equivalent to 633 homes per year, and nearly 14,000 tons of carbon emissions avoided.

*"South Hillsboro represents an unprecedented opportunity in Oregon – and perhaps the Pacific Northwest – to meet these objectives on a large scale."*

Seeing this opportunity, City staff have been working with several key partners, including the Energy Trust of Oregon, Oregon Department of Energy, Earth Advantage, Portland General Electric, and SolarWorld to design a high performance building incentive program for new construction in South Hillsboro that packages existing incentives and includes new incentives for developers to incorporate into their designs. Specifically, program elements of the 'South Hillsboro High Performance Building Partnership' concept include the following incentives:

- Energy Trust of Oregon



- o Energy performance incentives for committing to minimum energy efficiency levels above code
  - o Marketing/branding support
  - o Training for high efficiency design and build practices and technologies
  - o Quality assurance/certification to verify performance through commissioning
  - o Technical support
- SolarWorld
  - o Support goal to make Hillsboro the most 'solarized' community in the U.S. by offering Hillsboro-made SolarWorld residential solar kits directly to developers/builders at a premium price, providing project management for the Plan area and passing incentives to the developer/builder
- City of Hillsboro
  - o Provide to-be-determined relief and/or bonuses to developers that incorporate high efficiency design elements into new homes based on the Oregon REACH Energy Building Code
  - o Support marketing/branding of South Hillsboro "Complete, Connected and Green" aspects
- Oregon Department of Energy
  - o Provide incentives to developer/builder based on energy performance, to include tax credits or other available incentives
- Portland General Electric
  - o Provide incentives to developer/builder for installing smart, demand response enabled devices, including Nest thermostats, smart water heaters, EV chargers, and potentially batteries.

The City anticipates a two-part approach to integrating this potential program with development in South Hillsboro:

1. Developers would work with the City and/or the applicable entity to deliver energy efficient buildings, photovoltaic panels and energy production facilities, and/or PGE pilot program components integrated with their development in exchange for lower construction/installation costs and monetary incentives such as tax credits, other third party incentives and/or reduced permitting fees.
2. Developers utilize components of this incentive program as public benefit components of the developer's Planned Unit Development submittal application. Under this scenario developers would commit to the provision of certain energy efficiency performance and components, or installation of solar panels or pilot program components in exchange for flexibility from Community Development Code standards such as density increases, design elements flexibility, and open space requirement reductions. The City would accept and condition implementation of the High Performance Building components and

also provide certainty on the development standard flexibility sought by the applicant and allowed by the code.

The scenarios above could be utilized independently or jointly. If successful, this program would push high performance construction methods and technologies further toward standard practice, and could result in similar comprehensive building performance programs for other areas within Hillsboro and potentially within the entirety of the territory served by the Energy Trust of Oregon.

Table 1 below summarizes the current suite of incentives and options for the South Hillsboro High Performance Building Partnership. Further details are provided in the following narrative sections. The incentives are intended to support developers and builders in South Hillsboro to pursue high performance building design and implementation, to achieve the 'green' element for South Hillsboro through highly efficient built infrastructure. The incentives are voluntary and mutually exclusive, making the path to high performance homes up to the developer and builder.

### **City of Hillsboro**

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2. Developers utilize components of this incentive program as public benefit components of the developer's Planned Unit Development (PUD) submittal application. Under this scenario developers would commit to the provision of certain energy efficiency performance and components, or installation of solar panels or pilot program components in exchange for flexibility from Community Development Code standards such as density increases, design elements flexibility, and open space requirement reductions. The City would accept and condition implementation of the High Performance Building components and also provide certainty on the development standard flexibility sought by the applicant and allowed by the code.

### **Energy Trust of Oregon**

The Energy Trust of Oregon is offering up-front cash incentives for a commitment to establish a certain percentage of homes to be built to a minimum energy savings threshold. All incentives



are based on percentage performance above the Oregon Energy Code. A portion of the incentives will be offered up front, and the balance of incentives will be paid out upon verification of energy savings achieved post-commissioning.

EPS <sup>1</sup> Pathway	Percent above Code	2016 Incentive Level*
1	10%	\$480/home
2	20%	\$960/home
3	25%	\$1600/home
4	35%	\$3200/home
5	40%	\$4000/home

**Table 1: Energy Trust of Oregon EPS Incentives**

\*Currently subject to change, but will be locked in for 2-year time period upon program adoption

**Step 1:** Select an EPS Pathway baseline commitment (20% above code)

**Step 2:** Identify total units that will comply with baseline commitment

**Step 3:** Calculate upfront cash incentive

**Step 4:** Select an EPS Pathway stretch level commitment

**Step 5:** Identify goal number of units to reach stretch pathway

**Step 6:** Calculate cash-incentive payback opportunity upon completion of project

## SolarWorld USA

SolarWorld, the largest solar photovoltaic (PV) manufacturer in North America, is one of Hillsboro largest employers, with over 800 employees. SolarWorld is offering an innovative approach to new home construction solar installation that reduces the per-watt cost and allows homeowners to build the cost of solar into their initial mortgage. By using the electrical and roofing sub-contractors already onsite, providing pre-engineered kits directly to builders, and managing the pre-installation work on the builders' behalf, SolarWorld is able to cut significant cost and make it easy for builders to incorporate solar into all their homes. The price to the builder is ~\$1.50 per watt and can be sold to the homeowner at \$2.50 per watt, a significant savings for both the builder and homeowner.

Installed System Price	\$12,500.00
Energy Trust Cash Incentive (received at time of purchase)	-\$2,750.00
Cost at Installation	\$9,750.00
Tax Credits	
OR Tax Credit (taken over 4 years, up to \$1,500 per year)	-\$6,000.00
Federal Tax Credit	-\$2,925.00
Total Net Cost	
Actual Cost After Tax Credits	\$825.00

<sup>1</sup> Energy Performance Score (EPS) is an Energy Trust of Oregon incentive program for new residential construction.

Percentage of home's electricity produced by solar:	54%

Table 2: SolarWorld South Hillsboro New Construction Incentive Financial Summary Based on 5kW System

### Oregon Department of Energy

Residential Energy Tax Credit (RETC)

More TBD

### Portland General Electric

TBD

### Program Summary

The South Hillsboro High Performance Building Partnership seeks to incent high performance building on a large scale. Table 3 summarizes the potential offerings and program elements. This document is considered 'living' and subject to amendment as incentives change and opportunities arise. As of July 2016 program elements are still under development/refinement and will be solidified by late summer/early fall 2016 for discussion with the private developers.

Entity	Incentive	2016 Incentive Level*	Notes
Energy Trust of Oregon			
	Build to 10% above Oregon Code	\$480/home	
	Build to 20% above Oregon Code	\$960/home	
	Build to 25% above Oregon Code	\$1600/home	
	Build to 35% above Oregon Code	\$3200/home	
	Build to 40% above Oregon Code	\$4000/home	
City of Hillsboro			
	Consideration of CDC requirement modifications	Various, depending on specifics	May include design and open space and other requirements in exchange for high efficiency building commitments
Solar World			
	Residential Solar Kits	Sold to builder at \$1.50/watt	
	Project Management for solar installations during construction		



Entity	Incentive	2016 Incentive Level*	Notes
Oregon Department of Energy			
	Residential Energy Tax Credit		
Portland General Electric			
	Nest smart thermostat		
	Electric vehicle-ready charging infrastructure		
	Electric vehicle-ready charger		
	Smart water heater		

**Table 3: Summary of High Performance Building Partnership Incentives**

\*Current incentives during program agreement period, subject to change thereafter